DOCUMENT RESUME

ED 151 866 CS 501 973

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TITLE Measurement of Preference for Procedural Order in Small Task-Oriented Groups.
PUB DATE Dec 77
NOTE 28p.; Paper presented at the Annual Meeting of the Speech Communication Association (63rd, Washington, D.C., December 1-4, 1977)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Adults; *Group Discussion; *Group Dynamics; Individual Differences; *Measurement Techniques; Reliability; *Speech Communication; Task Performance; Validity
IDENTIFIERS *Communications Research

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MEASUREMENT OF PREFERENCE FOR PROCEDURAL ORDER IN SMALL TASK-ORIENTED GROUPS

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Submitted to

Speech Communication Association

DEBUT PANEL

Interpersonal and Small Group Division

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CS501973

CONSTRUCTION AND TESTING OF A QUESTIONNAIRE TO ASSESS AN INDIVIDUAL'S PREFERENCE FOR PROCEDURAL ORDER IN SMALL TASK-ORIENTED GROUPS

Much of the research on task-related messages in small groups centers on substantive themes, task functions, task characteristics and decision-making processes. (Crowell and Scheidel, 1961; Bales and Slater, 1955; Benne and Sheats, 1948; Shaw, 1971; Fisher, 1970; and Gouran, 1969) Another task-related variable which seems indigenous to the communication patterns of group members but which is often neglected in the small group literature is the task activity of groups, i.e., their work habits and procedural norms.

Although some investigators include a procedural statement category into their schemata for analyzing group interaction (Borgatta and Crowther, 1965; Berg, 1967; Stech, 1970), researchers rarely treat messages about a group's work activities as the salient variable in an experiment. While authors of small group texts acknowledge the difference between formal operating procedures and informal work habits and recognize that some groups are highly organized and structured in their task behavior while others plan less frequently and seem almost chaotic, no researcher has attempted to investigate the types of procedural messages, to develop a taxonomy of procedural patterns, nor to determine why work norms in groups vary from extreme adherence to pre-planned agendas to an absence of explicit guidelines for organizing task activities.

A procedural theme in small group communication is variously defined as: "any contribution which relates to how the group should proceed" (Berg, 1963), "statements...concerned with the mechanics of group planning or the use of time" (Crowell and Scheidel, 1961), and "the methods people in groups use to combine their efforts to do the work"(Stech and Ratliffe, 1976). For this study the researcher defines procedural messages as patterns which constitute a group's <u>modus operandi</u> for working on a task or the behaviors of members

which are associated with planning and organizing a group's task endeavors.

Investigators who treat procedural messages as a distinct category indicate why this variable is important for communication research. Berg (1963, 1967) contends that all groups including social ones decide on the timing and ordering of activities and that no group could function effectively without concern for procedural matters. His research reports that discussion of procedures in groups ranks second, next to substantive messages, in total time-devoted-to-theme; that is, about one-third of a group's time, more than is devoted to non-task themes, is spent on procedural issues. Stech's (1970) work also suggests that the amount of procedural messages is inversely related to the frequency of emotional-personal statements in task groups.

PURPOSES AND OBJECTIVES OF THIS RESEARCH

This study, as part of a long-range research project on how groups develop procedural norms, investigates the hypothesis that members of task-oriented groups tend to be more or less comfortable with either highly-organized or loosely-structured work habits. If researchers could assess whether subjects were high or low in terms of their comfort with tightly or loosely structured procedures in work groups, they could systematically vary group composition to study the effects of member preference for procedures on the emergent work norms in groups. This study then aims to develop an instrument which measures comfort with procedures in task-oriented small groups. More specifically, this study addresses the following objectives: 1) to clarify and refine the concept 'procedure' and its properties, 2) to generate test items based on these properties, 3) to incorporate these items into a questionnaire and check the internal and external reliability of this instrument, and 4) to report on the results of a preliminary predictive validity experiment with this instrument. This project then fits into the intermediate stage of an ongoing program of research in that it forms an essential link between the discovery of a concept and the cumulative investigations which support, modify or reject it.

CATEGORIES AND PROPERTIES OF PROCEDURAL MESSAGES IN SMALL GROUPS

Investigators of group process at the University of Minnestoa identified a concept procedural order which was defined as the degree of systematic order inherent in the type of procedural behaviors that occurred in small group process (Bormann, 1975). The research program in which this concept was formulated utilized inductive, qualitative methods of audio and videotaped group meetings, diaries of members, fantasy journals and case studies prepared by participant and nonparticipant observers to generate patterns, categories, and hypotheses about the ways groups organize their tasks. The following observations about procedural order emerged from the qualitative analysis of group process: 1) Groups differed in the amount of procedural communication members employed and in the effective use of orderly procedures; 2) Some group members appeared to be more comfortable in highly-organized work groups while others seemed more relaxed with free-wheeling, free-associative work habits; and 3) These preferences for different procedures are embodied in the verbal and nonverbal messages and message patterns that members exchange.

As Bormann summarized:

> Some members of most groups need a defined structure which includes clearly stated goals for meetings and termination dates for larger projects. They need an agenda or a plan of action that is relatively specific and clear...At the other end of the continuum, some members of most groups dislike structure. They feel restricted and hemmed in by an agenda. They prefer free-wheeling discussion and like to 'kick ideas around.' (Bormann, 1975, p. 161)

Other researchers corraborate the findings of these investigations. Bennis and Shepard (1956) describe a similar conflict about procedures which occurs in the counterdependence--fight phase of a group's development. Applbaum, et. al. (1974, p. 108) posit that some group members become frustrated, dissatisfied or bored when group procedures for problem solving are unsystematic. Yet, a plan of action which may seem unstructured to one member may be quite orderly in the experience of the individual who suggested it.

Procedural messages derived from case analyses in the Minnesota studies

and supported in a review of the literature identified two major categories of procedures which can be characterized by four properties in each category:

High Procedural Order (HPO)

1) The use of planned, sequential patterns for organizing task activities, such statements as, "I think we ought to list what we're going to do so we can get organized." and "Let's draw up an agenda so our next meeting will be orderly."
2) Concern for time-management, e.g., "Let's finish before we run out of time." and "According to my watch, we're scheduled to finish in five minutes."
3) An emphasis on regular, predictable procedures, e.g., voting policies, division of labor and routine tasks such as arranging for facilities and distributing materials.
4) An emphasis on clarifying group procedures and reminding members to adhere to the task, e.g., "Let's stick to why we disagree." "Where are we?" "Let's review our activities."

Low Procedural Order (LPO)

1) Use of chain-association or a cyclical procedural pattern, e.g., jumping back and forth between phases of an agenda, integrating discussion of problem and solution in a cyclical rather than linear fashion, and using a brainstorming-pattern of progressing through a meeting.
2) Flexibility in establishing and changing plans, e.g., constructing an agenda but never using it, establishing a timetable but forgetting about it, concurring on a decision and later reconsidering it.
3) Oblivious to time constraints, e.g., members seem unaware of how much time is spent on issues; the discussion lacks signposts on when it is time to adjourn and how soon assignments are due.
4) An emphasis on a balance between task and socio-emotional needs of the group, e.g., frequent pursuing of tangests, spontaneous sub-divisions with multiple conversations on both task and socio-emotional issues.

In some of the group literature, there appears to be a bias for HPO work habits. High structure situations are considered comfortable, while low structure ones are seen as producing anxiety and chaos (See Penland and Fine, 1974, pp. 21, 41, 55 and McGregor, pp. 232-234). Further, it is assumed that in order to accomplish group objectives, members need considerable organization and structure (See Maier and Solem, 1962, p. 157; Potter and Anderson, 1976, p. 5 and Burgoon, Heston, McCroskey, 1974, p. 131).

On the other hand, Shure and his associates (1962) contend that groups seldom plan and rarely proceed through a series of prepared steps. Even when given the opportunity to organize and coordinate, groups tend to move quickly

into the task resolution stage. Thus, other investigators (Bormann, 1975; Fisher, 1974) conclude that 'agendas don't work'and 'groups don't progress via step-by-step procedures' or as Weick (1969) explains, "It is the reflective glance, not the plan per se, that permits the act to be accomplished in an orderly way. A plan works because it can be referred back to actions in the past, not because it accurately anticipates future contingencies..." (p. 34).

It seems apparent that some groups spend a modicum of time on alternative performance strategies, whereas others deliberate frequently on procedural matters and belabor detailed outlines of group activities; some groups adhere to pre-set methods of work, while others alternate between a variety of approaches. These differences may have influenced Zaleznik and Moment (1964) to conclude that each group must discover for itself which procedures are most appropriate for its membership and its task. Assessment of member preferences for procedures, however, may lead to further insights about the way a pattern of work habits emerge in a group.

CONSTRUCTION OF THE GROUP PROCEDURAL ORDER QUESTIONNAIRE

In an attempt to assess a person's preference for procedures in groups, this researcher constructed a Likert-type scale, the Group Procedural Order Questionnaire (GPOQ). From a large pool of items drawn from the case studies and the review of the literature, the investigator selected twenty-four items which exemplified the four characteristics of HPO communication and another twenty-four which depicted the four characteristics of LPO patterns. List 1 presents a classification of these items into the two major categories and the corresponding properties of procedural order. It seemed plausible that an individual's

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Insert List I

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preference for procedural order could be respresented on a continuum from very comfortable to very uncomfortable. Thus, someone who desired HPO work climates would indicate discomfort with LPO items while another person who liked flexibility in procedures would be uncomfortable with HPO items.

Throughout each stage of research on this instrument, the investigator attempted to minimize or to account for random and constant sources of measurement error. Items on the GPOQ were worded both in the HPO and the LPO direction to control for acquiescence of responses, the tendency of subjects to score all items in one direction. Similarly, attempts were made to balance HPO items which might seem more socially desirable with equally acceptable LPO items; however, the overall attractiveness of HPO versus LPO was not determined.

Multiple forms of the GPOQ, one with a dichotomous, comfortable or uncomfortable, response format and one with a seven-point Likert scale, were used in analysis and selection of items, in determining internal and external reliability and in conducting preliminary investigations on concurrent validity to verify that the general format of this instrument did not confound the results of these studies.

SUBJECTS

Six hundred and seventeen students from basic and advanced-level speech-communication, psychology and sociology classes at six colleges and universities constituted the sample for the various stages of this study. A total of 220 subjects were involved in the item analysis stages of developing the GPOQ; 202 subjects, in the test-retest and alternate-form reliability procedures and 195 in the preliminary investigation of concurrent validity.

As a whole, subjects ranged in age from 18 to 47, with a modal age of 20 and were generally white middle-class students with an approximately equal number of males and females. To control for possible demand effects in

in soliciting volunteers, an identical explanation was presented to all students. The investigator asked subjects to envision that they were members of a group in which the incidents described in the test items occurred regularly and frequently. They were to indicate the degree of comfort or discomfort they might feel in each circumstance by circling a number which corresponded to the adjective that best approximated their feelings. Each item was to be treated as a separate and independent judgment.

ANALYSIS OF ITEMS ON THE GPOQ

Results of item analysis on the dichotomous and the multipoint versions of the forty-eight item instrument indicated that the GPOQ was a relatively homogeneous test. For Form A, the dichotomous version, the average Point Biserial correlation coefficient for the forty-eight items was .33, the average significance level for a Chi-square test on each item between the frequency of subjects in the upper third of the total scores who responded in the keyed HPO direction and the number of students in the lower third of scores who selected HPO answers was $p < .13$, and the KR-20 for the test was .82, which was above the .80 minimum internal consistency ratio required for a homogeneous test (See Nunnally, 1967, pp. 263-264).

For Form B, the multipoint version of the GPOQ, the average item-score correlation was .27, the average significance level for t tests on each item between mean item scores of subjects in the top third and those in the bottom third of total scores was $p < .05$, and the Cronbach alpha coefficient for the instrument was .83.

Since some of the items fell below the minimal .30 that the researcher set for item-score r and the .01 alpha level set for acceptable discriminatory power of an item, the last version of the GPOQ was reduced to the best thirty-two items (16 HPO and 16 LPO, the ones identified with an asterisk in List 1). The

average item-score correlation for the top thirty-two items on the multipoint scale was .38, the mean factor loading from an orthogonal varimax rotation of a principal component factor analysis was .45, the average alpha level for t tests on each item was $p < .001$ and the Cronbach alpha for these items was .865. This data then indicated that the GPOQ discriminated between subjects, yielded high item-score correlation coefficients and provided relatively high internal reliability.

RELIABILITY AND VALIDITY RESEARCH ON THE GPOQ

External Reliability

Alternate forms of the GPOQ were constructed by slitting the thirty-two item, multipoint version into two questionnaires, each consisting of sixteen items (eight HPO and eight LPO). The items on both tests were arranged in a similar order and were balanced in terms of item-score correlation coefficients and item difficulty levels. The alternate-form reliability coefficient for the 115 students who took both questionnaires within a 12-to-14-day interval was .75.

Concurrent administration of the two questionnaires to thirty-nine additional subjects yielded a reliability coefficient of .80; hence the .05 difference between the two coefficients indicated changes in a subject's responses over time, while the .20 difference resulted from variations due to extraneous factors (see Anastasi, 1970, pp. 78-89). For long-term consistency, forty-eight subjects completed the thirty-two item form of the GPOQ in a test-retest procedure with a ten-week interval. The correlation between the two administrations was .69. These procedures suggested that the concept which the GPOQ measures was relatively stable over a short period, but gradually decreased in consistency over a longer span of time.

Preliminary Investigation of Predictive Validity of the GPOQ

In this experiment, peer nominations of the member who seemed most comfortable with tightly-structured group procedures and the one who seemed

least comfortable with them served as a criterion measure. Although this criterion had not been empirically tested, descriptive studies on procedural order employed it and it seemed directly linked to the concept which the GPOQ was designed to measure.[1] In addition, ratings by peers had been substituted frequently for a 'pure criterion measure' in criterion validity research (see Edwards, 1959, p. 21 and Selltiz, et. al., 1976, p. 172).[2]

It was reasoned that if the GPOQ tapped member preferences for a group's work climate, these expectations would be communicated, either overtly or covertly, to other members. Moreover, other members could identify these behaviors as preferences for particular work habits; that is, they could differentiate between communication which signaled a desire for systematic, planned steps of organization and that which disclosed a need for a free-wheeling, flexible work environment. Therefore, it was hypothesized that:

H_1 : Peer ratings of HPO nominees on the GPOQ will differ significantly from peer ratings of members selected as LPO nominees.

H_2 : Peer ratings on the GPOQ for HPO and for LPO nominees will correlate significantly and positively with self-report scores on this questionnaire.

H_3 : Subjects selected by other group members as HPO nominees will receive significantly higher self-report scores on the GPOQ than those selected as LPO nominees.

Procedures. One hundred and forty-nine students enrolled in seven small group discussion classes completed a survey which asked them to nominate from their respective group the member that most preferred tightly-organized work procedures and the one who most preferred flexible and loosely-structured procedures. All students in the seven classes were assigned to a task group; thus approximately twenty-two groups of four to six members were included in this experiment.

When the survey was taken, each group had existed for three to four weeks and had averaged approximately eight sessions together. In one class where

members had met together only twice, students were unable to decide who should be nominated and consequently, this class was excluded from the survey. In this case then length of time together as a group seemed to affect a member's willingness to select an HPO or an LPO nominee.

Participants were asked to identify by name one member of their group who seemed most comfortable with highly structured procedures and one who seemed most comfortable with flexible and free-wheeling work environments. Even though subjects sometimes expressed a desire to nominate two or more people for each position, they were urged to pick the one whose communication in the group clearly supported his or her preference for a tightly or loosely organized work setting. Also, the investigator told subjects to include their own names in the list of potential nominees. One limitation of this procedure was that the experimenter could not control group composition; that is, it was possible for groups to contain all HPO or all LPO members.

Approximately two weeks after this survey, the same subjects received three copies of the GPOQ which were labeled either X, Y or Z. Participants were asked to complete test X as a self-report on how they would feel it these incidents occurred regularly and frequently in their groups. For copy Y, the experimenter instructed them to anticipate how person #1 in their group would respond and for copy Z, how person #2 would react. For each subject the name of person #1 was written at the top of copy Y and the name of person #2 was written at the top of copy Z; both names corresponded to that subject's choices for HPO and for LPO group members, respectively.

Although subjects possibly associated this investigation with the earlier survey, the experimenter avoided labeling person #1 as HPO and person #2 as LPO in hopes that participants would not stereotype how HPO and LPO people should respond on the GPOQ. Also, the experimenter instructed students to complete

the questionnaires in the order in which each appeared in the packet; hence if copy Z was on top, they should fill it out first then complete the other tests in sequential order. The arrangement of the three copies for each subject was systematically rotated to control for possible order effects.

In effect each group member who participated in the first survey received a packet which contained three copies of the GPOQ, X, Y and Z. The names of that subject's nominees for HPO and for LPO group members were written at the top of copies Y and Z, respectively; these copies comprised the two peer ratings, while copy X served as a self-report inventory of the subject who received the packet.

Results. Participants in the earlier survey chose thirty-five members as HPO nominees and forty-three as LPO nominees. Subjects made more nominations but many of them duplicated names on other ballots. Only 14 (seven HPO and seven LPO) of the seventy-eight nominees were picked by at least three of the five or six group members, i.e., at least three members concurred in their independent selection of HPO or of LPO members. In five groups, the votes of at least three people concurred on both the HPO and the LPO nominees.[3]

Group members completed 24 peer ratings of HPO members and 29 for LPO members with Form A, the dichotomous version of the GPOQ.[4] Students turned in eleven peer-rating of HPO members and fourteen peer-ratings of LPO selectees with Form B, the multipoint version of the GPOQ. As predicted, peers perceived that HPO designees would score significantly higher on the GPOQ than would those named as LPO members. A Mann-Whitney U test between the 24 peer-rated HPO scores and the 29 peer-rated LPO ones on Form A produced a U of 49.5, a Z Scores of -5.33, $p < .0002$. Similarly on Form B, mean scores of peer ratings of the 11 HPO nominees were significantly higher than those for the 14 LPO designees ($t = 4.19$, $df = 23$, $p < .001$, see Table 1).

In essence, peers anticipated that group members whom they designated

as HPO individuals would attain divergent scores from those whom they designated as LPO members. In some respects this prediction seemed obvious, yet the verification of it supported, to some extent, the content validity of this instrument. From the perspective of fellow group members, the items on the GPOQ seemed to distinguish between people they viewed as having differential preferences for procedural order in groups.

To test hypothesis 2 the investigator correlated peer-rated scores on the GPOQ with respective self-report scores of HPO and LPO nominees. In some cases the individuals who were selected as HPO or as LPO nominees failed to submit self-report questionnaires or members who named them failed to turn in peer evaluations. Consequently the sample size in each group was small. A Spearman Rho correlation between self-report scores and peer ratings of 18 HPO designees on Form A of the GPOQ yielded a .26 coefficient and a similar correlation for 27 HPO nominees revealed a .19 coefficient.

In like manner, Pearson correlations between peer ratings and self-report scores on Form B were non-significant (HPO, $N = 9$, $r = .41$; LPO, $N = 10$, $r = .73$). Although these coefficients were considerably higher than those for the dichotomous form, the small sample sizes made it difficult to draw conclusions from this data. If the investigator could have obtained a larger sample size or would have computed correlations by combining HPO and LPO groups, these coefficients might have been higher. Based on this data the four coefficients indicated that peer ratings of HPO and of LPO nominees did not correspond to the self-report scores; hence H_2 was rejected.

The prediction in H_3 that HPO nominees would receive significantly higher self-report scores on the GPOQ than would LPO nominees was confirmed. A t test between the mean self-report scores of the two groups demonstrated that the HPO scores were higher than the LPO ones on both forms of the GPOQ (Form A, $t = 2.12$, $df = 31$, $p < .02$; Form B, $t = 4.16$, $df = 17$, $p < .001$, see Table 2).

As a cross-validation of this finding, forty-six students in two summer session small group discussion classes took Form B of the GPOQ in conjunction with designating HPO and LPO group members. In this investigation, unlike the first one, subjects completed both the GPOQ and the nominations for HPO and LPO members concurrently thereby allowing the experimenter to control for order effects of these procedures.

A significant difference was found between the mean scores of the ten students named as HPO members and the eight designated as LPO people ($t = 4.31$,1Q, $df = 16$, $p < .001$, see Table 3). These findings reaffirmed those in the first experiment, namely that subjects chosen by group members as demonstrating preferences for a tightly-structured work environment scored significantly higher on the GPOQ than did individuals picked as expressing a need for a loose, free-wheeling work setting.

Discussion. The acceptance of H_1 indicates that group members regard HPO and LPO individuals as distinct populations with significantly different mean scores on the GPOQ. Acceptance of H_3 shows that group members who are nominated as HPO and LPO individuals receive significantly different self-report scores on this test. Yet, the rejection of H_2 suggests that peer ratings of HPO and of LPO designees do not parallel the self-report scores of these people. In effect mean and standard deviations between peer and self-report ratings on both forms indicate that peer ratings yield more extreme scores than do self-ratings; that is, peer ratings are closer to the maximum-minimum test scores than self-report ones are (see Tables 1 and 2). In particular, peers tend to rate LPO nominees much lower than these individuals actually scored.

Small sample sizes, social desirability of HPO behaviors and stereotyping of peer preferences are factors which may contribute to this variability. Because sample sizes of peer ratings within each category are small, the probability of sampling error is high; consequently these subjects may not

reflect the pattern of a larger population of peer ratings.[5] But the rather sizeable discrepancy between peer and self-report scores for LPO members suggests that other factors also influence this disparity.

Social desirability of HPO behaviors may be one of these factors. That is, if a positive valence exists for systematic procedures in work groups, it would be more socially advantageous to indicate a preference for HPO than for LPO items. In other words, because society may associate efficiency in work groups with HPO patterns, the desire to create a favorable image may influence the way a person scores the GPOQ. But when peers assess another member's preferences, the desire to give a socially acceptable response may not be operative.

Another factor which may affect the incongruity between peer and self-report scores is a tendency to stereotype HPO and LPO nominees; therefore a peer rating would reflect a prototype of any HPO or LPO person rather than the estimated preference of a particular member. Internal consistency coefficients of peer ratings for HPO and LPO subjects support this assumption. The Cronbach alpha on Form B is higher for the peer ratings than for the general sample, e.g., .95 for HPO scores and .91 for LPO scores in comparison with .87 for the general sample.

In addition to the tendency of subjects to stereotype peer preferences, the reliability and validity of peer ratings as a criterion measure hinge on the perceptual sensitivity of each judge. Some peers may monitor behavior of members more closely than others do, while others may be astute observers of communication behavior, but may attribute inaccurate motives or rationale to what they perceive. Thus, an individual's ability to observe other members and to understand group process affects the use of peer ratings as a criterion.

The accuracy of peer ratings often depends on the extent to which a trait is manifested in behavior, i.e., it seems easier to estimate capabilities, preferences and personality traits of others if such attributes are exemplified

in behavioral patterns (See McGrath and Altman, 1966, p. 56). Mann (1959) claims that peers are better judges of adjustment, leadership potential and dominance than of introversion and interpersonal sensitivity. Since the items on the GPOQ are based on the communication behaviors of group members as recorded by participant and non-participant observers, it would seem that preference for procedural order is evinced in the behaviors of group members.

Factors germane to the questionnaire itself may also influence the discrepancy between peer and self-report scores. Perhaps an abbreviated rating scale of eight items based upon the properties of HPO and LPO would simplify the scoring task and would yield higher correlations with self-report scores on the same scale.

Thus, the disparity between peer and self-report scores may accrue from a combination of factors, e.g., a tendency to stereotype HPO and LPO responses, possible social desirability of HPO preferences, differential abilities of peers in observing and analyzing behaviors of other members, and excessive length and scope of the GPOQ.

Conclusion. The findings of this experiment reinforce the contention that scores on the GPOQ characterize the behaviors of group members, but they do not verify that this instrument measures preference for procedural order in groups. Since peer nominations of HPO and LPO members serve as a reasonable but not a valid criterion, peer ratings as well as scores on the GPOQ may assess some other group variable, e.g. leadership, task-orientation. Moreover, size and nature of group composition could contaminate the results of peer nominations in that a majority of HPO members may populate some groups while LPO individuals may comprise the membership of others. In these circumstances, peer nominations would distinguish, somewhat erroneously, between HPO and LPO members.

The results of this study, however, attest to the likelihood that the GPOQ can predict the communication behaviors of HPO and of LPO members. That is,

if participants can identify those individuals who receive high or low scores on this test, then the instrument inventories preferences and needs which seem manifested in the overt actions of group members.

SUGGESTIONS FOR FUTURE RESEARCH

Future research on procedural order should concentrate on the relationship between the GPOQ and other group-oriented variables such as task structure, consensus, interaction patterns and group work norms. There is some evidence that the structure inherent in the group task may influence a person's preference for procedures in groups. Bochner (1975) reports that task structure has a significant effect on group interaction and, in particular, on procedural communication. An analysis of group interaction based on Borgatta and Crowther's IPA indicates that unstructured tasks demand more activity than structured ones do.

A series of studies conducted at the University of Indiana demonstrate that consensus is positively related to statements of orientation--messages which attempt to facilitate achievement of the group's goal through conflict-reduction, provision of facts and making helpful suggestions (see Gouran,1969; Kline, 1970 ; Knutson,1972). Although operational definitions of 'orientation' do not include the term 'procedures', it is likely that statements on procedural matters are treated as facilitating the group goal.

Communication among group members is a third variable which seems related to preferences for procedures in groups. Since the GPOQ purports to assess response to procedural messages, then it should differentiate between members who make divergent procedural-oriented statements. Decisions on how to code both HPO and LPO patterns entail queries about unit of measure and about boundaries between procedural order functions and other message categories. Should statements of individuals or should interact patterns of all members comprise the unit of analysis? Should coders focus on frequency of category

distribution or on sequential patterns among units, or on time-devoted-to-procedural themes?

Since it seems that HPO characteristics are often manifested in the direct overt initiatives of members while LPO ones may be seen in indirect responses which relate to the actions of other group members, e.g., development of multiple conversations, amount of time that the group spends on one item of a long agenda, a tendency for the group to pursue tangents, the composite patterns of the group members seem more valuable for analyzing procedural messages than do isolated units. Ideally, this system should contain categories which interrelate procedural messages through time and across subjects in order to detect and to describe chain-association and hierarchical work patterns. In like manner, the use of time-devoted-to-themes and sequence of interact patterns seems more appropriate to the more subtle aspects of procedural messages than a frequency count does.

Furthermore, this system should distinguish between procedural order and other related message patterns, e.g., group task functions such as clarifying content issues, evaluating evidence and mediating tensions. The difficulty in treating content and procedure as discrete units arises when content discussion is used for a procedural end, such as formulating agendas and dispersing group assignments.

Adaptation of the GPOQ into a content analysis system for analyzing interaction patterns in groups may incur a number of problems, namely how to integrate message units into a description of group actions, how to incorporate nonverbal as well as verbal cues and how to distinguish between procedural order statements and other task-related messages. Thus future research on the GPOQ should concentrate on the relationship between this instrument and measures of other group variables and on the degree to which predispositions for procedural order are rule-governed by a particular context.

LIST I

Items on Group Procedural Order Questionnaire: Categories and Properties

High Procedural Order

A. Use of Planned, Sequential Patterns for Organizing Task Activities

*1. A group member likes to arrange in priority or rank order alternatives mentioned in the discussion.

*2. The group decides to use an agenda at each planning session to keep the meeting tightly organized.

*3. A group member carefully interrelates different contributions and links ideas together to keep the group structured.

4. Someone goes to the blackboard and organizes the group thinking in outline form.

*5. Someone suggests that the group list all of the ideas on paper and discuss each one in turn.

*6. The group has two days remaining before presenting a panel discussion. One member wants the group to list tasks that they should finish within the next two days.

*7. One group member is trying to get things organized by suggesting procedures to be followed.

8. One member suggests that they go around the group and everybody in turn say what they think about the topic.

*9. One group member wants everything written down in clear outline form and often reads what he has written down to orient the group.

10. A member insists that the group should reach consensus on causes of a problem before discussing possible solutions.

B. Concern for Time-Management

*11. A group member keeps an eye on the watch and frequently reminds the group about how much work is still to be accomplished.

12. Several members are into a trivial debate and somebody tells them to 'knock it off' because they are wasting time.

*13. The group sets clearly defined goals for future meetings.

*14. The group sets deadlines for the completion of tasks.

C. Emphasis on Regular, Predictable Procedures

*15. The meeting has been planned so carefully that everyone seems to know exactly what is expected of the group.

16. The group is working on ways to improve procedures for faculty evaluation. One member suggests that they delegate tasks so that each person knows which aspect of the topic to research.

*17. At the end of each group meeting, one member summarizes the discussion and provides a sense of closure to the group's interactions.

18. A group member suggests that the group adopt a policy of taking a formal vote with a show of hands for making decisions on major issues.

19. With very few preliminaries the group meetings get right down to the business at hand.

*20. When the group meets outside of class, it establishes a set time, day and place for regular sessions.

D. Emphasis on Clarifying Group Procedures and Reminding Members to Adhere to the Task

*21. At the beginning of each group meeting, one member reminds the group what should be accomplished during the next hour.

*22. When the group digresses and begins to discuss non-task issues, one member immediately asks the group to return to the work at hand.

*23. The group leader is moderating the discussion in a firm way so that the group sticks to the agenda and to business.

24. A member is telling some interesting details about her personal life and another member interrupts in order to get the group back to work.

Low Procedural Order

A. Use of a Chain-Association or a Cyclical Procedural Pattern

25. One person in the group is continually throwing out ideas about everything under the sun.

*26. The group develops a norm of generating ideas through following one tangent after another and ends up on a different topic than it started with.

*27. The group jumps from point to point without coming to any decisions.

*28. The group is brainstorming wild ideas for the fun of it.

*29. The group is kicking ideas around without a specific aim or purpose.

30. The group fluctuates between discussion of the problem to consideration of possible solutions back to analysis of the problem.

B. Flexibility in Establishing and Changing Plans

31. Someone comes in late to a meeting and the group decides to explain to the latecomer what has happened so far.

*32. The group decides to follow a procedure to make a decision and suddenly they seem to have forgotten all about it.

*33. None of the members seem to know for sure why the group is meeting.

34. Sandy believes that assigning tasks for members to complete before the next meeting is too limiting. She prefers to gain a general overview of the topic rather than be assigned a task.

*35. The group members adopt a schedule for completing certain tasks, but drop this idea when they miss the first deadline.

*36. The group schedules a meeting for progress reports from four people and spends the entire session discussing the first report.

*37. You thought the group made a decision but when you came to the next meeting the group took up the matter again and discussed it.

C. Oblivious to Time Constraints

*38. The group members are socializing and kidding around without keeping an eye on how much time is left to do the job.

39. The group has only one week to submit a report but they are not worried or nervous about meeting this deadline.

D. Emphasis on a Balance Between Task and Socio-Emotional Needs of Members

*40. The group is having a lively discussion and suddenly there are several conversations going on at the same time.

*41. A member of your group makes long contributions which rarely pertain to the issue the group is discussing.

*42. A member is cracking jokes and making funny comments while the rest of the group is trying to work.

43. One member interrupts the group's work to suggest that the group talk about an absent member.

*44. While the group works on its task, several members frequently recall scenes from a recent football game.

45. Member B likes to ramble on when making a point. He usually has some good ideas but likes to philosophize and talk around the issue before making his point.

46. One member is often confused regarding the group's task and always seems to be asking questions about what is happening.

*47. Someone interrupts the discussion of a point to bring up an interesting but completely different idea.

*48. Your group believes that the task is not as important as socializing with group members.

Table 1

Descriptive Indices of Peer Ratings of HPO and LPO Nominees on Forms A and B of the GPOQ

		N	Median	Mode	Mean	Range
Form A (Dichotomous)	Peer Ratings of HPO Nominees	24	34	40		20-46
	Peer Ratings of LPO Nominees	29	18	19		5-42
Form B (Multipoint)	Peer Ratings of HPO Nominees	11	270	270	251	178-293
	Peer Ratings of LPO Nominees	14	195	208	188	134-257

Table 2

Descriptive Indices of Self-Report Scores for HPO and LPO Nominees on Forms A and B of the GPOQ

		N	Mean	SD
Form A (Dichotomous)	Self-Rating of HPO Nominees	15	32.27	4.99
	Self-Rating of LPO Nominees	18	27.50	7.85
Form B (Multipoint)	Self Rating of HPO Nominees	9	248.89	26.27
	Self- Ratings of LPO Nominees	10	205.60	17.75

Table 3

Cross Validation Study: Descriptive Indices of Self-Report Scores for HPO and LPO Nominees on the Sixteen-Item Form of theGPOQ

Form C (Multipoint) 16-Items

	N	Mean	SD
Self-rating of HPO Nominees	10	82.5	12.87
Self-Ratings of LPO Nominees	8	75	9.37

FOOTNOTES

[1]Selltiz, et. al., admit that most investigators rarely find a valid and reliable criterion, consequently they select one which is adequate and keep its limitations in mind when drawing conclusions about the research (See Selltiz, et. al., 1976, p. 172).

[2]Edwards suggests that the degree of correlation found between peer ratings and scores on personality inventories is a function of a number of factors, but primarily the complexity of the variable and the amount of insight and knowledge the peer has of the subject and of the variable (See Edwards, 1959, p. 21).

[3]When these 78 nominees were combined with 18 collected during a summer school session, a breakdown of the number of members who concurred in their preferences for HPO or for LPO designees indicate an equivalent frequency of agreements in both categories. In the HPO group, 36 sets of agreements were tallied: 2-member concurrence = 18, 3-member = 10, 4-member = 5 and 5-member = 3. In the LPO group, 37 sets of agreements were tallied: 2-member = 22, 3-member = 9, 4-member = 5 and 5-member = 1.

[4]The researcher conducted this experiment during earlier stages of work on the GPOQ with the 48-item form of the instrument. Since the correlation between the 48-item and the 32-item multipoint versions of this test is .92, it is probable that replicating this experiment with the 32-item instrument would produce similar results, but this hypothesis has not been empirically tested.

[5]Standard error of the mean on Form B for peer ratings was 2.90 for HPO and 3.31 for LPO as compared with σ_m for self-report scores of 1.29 for HPO and 1.85 for LPO.

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